

**TEST TITLE:** CV-3989(V)1/SP ANALOG TO DIGITAL  
CONVERTER OPERABILITY

**TEST NO:** 45011-5-055  
**REV/CHG:** A

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**COVER SHEET**

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**TEST PROCEDURE PREPARATION:**

Prepared by: NSWC PHD DAM NECK DET CODE 6E10  
TDA Organization and Code

Date: 1 DEC 98

**TEST PROCEDURE REVIEW:**

Reviewed by: NSWC PHD DAM NECK DET CODE 6D10  
TDM Organization and Code

Date: 4 JAN 99

**DOCUMENTATION CERTIFICATION:**

Approved by: \_\_\_\_\_  
TDD Organization and Code

Date: \_\_\_\_\_

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**REVISION RECORD**

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<u>REV/CHG</u>	<u>DESCRIPTION</u>	Approval	
		<u>INITIAL</u>	<u>DATE</u>
-	Original Issue	NSWC	10 JAN 98
A	Incorporated validation changes.	FES	18 DEC 98

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**LIST OF EFFECTIVE PAGES**

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<u>PG-REV</u>	<u>PG-REV</u>	<u>PG-REV</u>	<u>PG-REV</u>	<u>PG-REV</u>	<u>PG-REV</u>	<u>PG-REV</u>
1 - A	2 - A	3 - A	4 - A	5 - A	6 - A	7 - A
8 - A	9 - A	10 - A	11 - A	12 - A	13 - A	14 - A
15 - A	16 - A	17 - A	18 - A	19 - A		

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**TEST OUTLINE**

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1. OBJECTIVE:

To verify that the CV-3989(V)1/SP Dual Signal Data Converter (CV-3989(V)1/SP DSDC) is operating properly with interfacing equipment.

2. ESTIMATED TESTING TIME:

1.5 hours

3. REFERENCES:

SE650-AQ-MMO-A10, Technical Manual, Operations and Maintenance for the Dual Signal Data Converter, CV-3989(V)1/SP

4. TEST OR SUPPORT EQUIPMENT AND MATERIAL:

<u>GENERIC NAME</u>	<u>QUANTITY</u>	<u>IDENTIFYING INFORMATION</u>
a. Multimeter	1	SCAT 4245 or equivalent
b. Oscilloscope	1	SCAT 4308 or equivalent
c. Terminator, 75-Ohms	1	SCAT 4596 or equivalent
d. T-Connector	1	UG-1173/u or UG-107B/u BNC

5. COMPUTER PROGRAMS REQUIRED:

None

6. PREREQUISITES:

45011-3-060, CV-3989(V)1/SP Analog to Digital Converter ILO

7. SPECIAL CONDITIONS AND SERVICES:

115 VAC, 1  $\phi$ , 60 Hz Power

8. EQUIPMENT INVOLVED IN TEST:

- a. CV-3989(V)1/SP DSDC
- b. Normal radar outputs applicable to ship configuration
- c. Normal navigation outputs applicable to ship configuration

9. CONFIGURATION:

No field changes required to run this test.

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**TEST OUTLINE**

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10. METHOD:

Utilizing inputs from the radar (Antenna Azimuth, True Bearing Indication (Lb), Master Trigger (Tm), and navigation (CQO and Distance/Speed), verify presence of the Radar Display and Distribution System (RADDS) Data Stream at each of the eight CV-3989(V)1/SP DSDC RADDS outputs.

11. STATION ASSIGNMENTS:

<u>STATION</u>	<u>NO. PERSONNEL</u>	<u>COMMENTS</u>
CV-3989(V)1/SP DSDC	1 Electronic Technician	Performs Operability Test

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**SAFETY INSTRUCTIONS**

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- a. Test personnel will strictly adhere to all safety precautions including, but not limited to, all Caution and Warning notes contained in this test procedure and applicable documents.
- b. Comply with ships regulations and safety precautions prior to antenna rotation and radiation. Remain clear of swing radius of rotating antennas.
- c. The operation of this equipment involves the use of high voltages that are dangerous to life. Extreme caution must be exercised at all times. Do not work on open or disassembled units when power is applied.

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**INITIAL CONDITIONS AND SETUP**

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<u>STEP</u>	<u>STATION</u>	<u>INSTRUCTIONS</u>
1	Radar	Ensure proper radar inputs are being supplied such as 5 wire Azimuth, True Bearing indication (Lb), and Master Trigger (Tm).
2	Navigation	Ensure proper navigation inputs are being supplied in accordance with ship configuration as follows:
<u>Input</u>	<u>Ship Parameter</u>	<u>Requirement</u>
CQO	90 <sup>0</sup> (East)	Course 5 Wire Synchro (360 <sup>0</sup> Per revolution) 115 VAC, 60 or 400 Hz, 1 $\phi$ , equal 90 <sup>0</sup> Synchro input.
Distance (Traveled)		Distance 5 Wire Synchro (360 <sup>0</sup> revolutions per 2000 yards of travel) 115 VAC, 60 or 400 Hz, 1 $\phi$ , equal 60 revolution per minute.
or		
Ships Velocity	10 Knots	Speed 5 Wire Synchro (40 Knots per revolution) 115 VAC, 60 or 400 Hz, 1 $\phi$
3	CV-3989(V)1/SP DSDC	Turn Maintenance Disconnect switch to OFF position (2JR Type).
4	CV-3989(V)1/SP DSDC	Open hinged door and set Upper and Lower chassis 1A2 Power Supply module switches to OFF position.
5	CV-3989(V)1/SP DSDC	Set AC POWER switch to OFF position.
6	CV-3989(V)1/SP DSDC	Disconnect RADAR 1 input cable connected to TM1 (J1).
7	CV-3989(V)1/SP DSDC	Using Oscilloscope, ensure radar input signal is present at disconnected cable. Input level should be a trigger pulse of positive polarity and 20V $\pm$ 5V amplitude. The pulse duration should be 1 $\mu$ s to 10 $\mu$ s at a frequency equal to Pulse Repetition Frequency (PRF) of the radar.

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**INITIAL CONDITIONS AND SETUP**

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<u>STEP</u>	<u>STATION</u>	<u>INSTRUCTIONS</u>																						
8	CV-3989(V)1/SP DSDC	Reconnect radar input cable to TM1 (J1).																						
9		Repeat steps 6 through 8 for RADAR 2 input cable to TM1 (J17).																						
10	CV-3989(V)1/SP DSDC	Disconnect input cable connected to SYNCHRO T/R (J49).																						
		<u>NOTE</u> The input cable connected to J49 provides the radar antenna azimuth, true bearing, and ship's navigation information (CQO and Distance/Speed).																						
11	CV-3989(V)1/SP DSDC	Turn Maintenance Disconnect switch to ON position.																						
12	CV-3989(V)1/SP DSDC	Using a Multimeter, ensure radar 5 wire antenna azimuth input signals are present at disconnected cable. Input should be as follows: 115 VAC, 60 or 400 Hz, 1 $\phi$ , 5 Wire Synchro information on R1 and R2 and 0 VAC to 90 VAC on any of the S1, S2, and S3 leads.																						
		<u>J49 Cable</u> <table><tr><th><u>Pin</u></th><th><u>Signal</u></th></tr><tr><td>10</td><td>Azimuth1 R1 (R HI)</td></tr><tr><td>11</td><td>Azimuth1 R2 (R LO)</td></tr><tr><td>12</td><td>Azimuth1 S1 → Varying Amplitude</td></tr><tr><td>13</td><td>Azimuth1 S2 → Varying Amplitude</td></tr><tr><td>14</td><td>Azimuth1 S3 → Varying Amplitude</td></tr><tr><td>29</td><td>Azimuth2 R1 (R HI)</td></tr><tr><td>30</td><td>Azimuth2 R2 (R LO)</td></tr><tr><td>31</td><td>Azimuth2 S1 → Varying Amplitude</td></tr><tr><td>32</td><td>Azimuth2 S2 → Varying Amplitude</td></tr><tr><td>33</td><td>Azimuth2 S3 → Varying Amplitude</td></tr></table>	<u>Pin</u>	<u>Signal</u>	10	Azimuth1 R1 (R HI)	11	Azimuth1 R2 (R LO)	12	Azimuth1 S1 → Varying Amplitude	13	Azimuth1 S2 → Varying Amplitude	14	Azimuth1 S3 → Varying Amplitude	29	Azimuth2 R1 (R HI)	30	Azimuth2 R2 (R LO)	31	Azimuth2 S1 → Varying Amplitude	32	Azimuth2 S2 → Varying Amplitude	33	Azimuth2 S3 → Varying Amplitude
<u>Pin</u>	<u>Signal</u>																							
10	Azimuth1 R1 (R HI)																							
11	Azimuth1 R2 (R LO)																							
12	Azimuth1 S1 → Varying Amplitude																							
13	Azimuth1 S2 → Varying Amplitude																							
14	Azimuth1 S3 → Varying Amplitude																							
29	Azimuth2 R1 (R HI)																							
30	Azimuth2 R2 (R LO)																							
31	Azimuth2 S1 → Varying Amplitude																							
32	Azimuth2 S2 → Varying Amplitude																							
33	Azimuth2 S3 → Varying Amplitude																							
13	CV-3989(V)1/SP DSDC	Using a Multimeter, ensure CQO 5 wire navigation information is present at disconnected cable. Input should be as follows: 115 VAC, 60 or 400 Hz, 1 $\phi$ , 5 Wire Synchro information on R1 and R2 and 0 VAC to 90 VAC on any two of the S1, S2, and S3 leads.																						

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**INITIAL CONDITIONS AND SETUP**

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**STEP    STATION**

**INSTRUCTIONS**

<u>J49</u>	
<u>Cable Pin</u>	<u>Signal</u>
5	CQO R1 (R HI)
6	CQO R2 (R LO)
7	CQO S1 → Varying Amplitude
8	CQO S2 → Varying Amplitude
9	CQO S3 → Varying Amplitude

14 CV-3989(V)1/SP DSDC Using a Multimeter, ensure Distance/Speed 5 wire navigation information is present at disconnected cable. Input should be as follows: 115 VAC, 60 or 400 Hz, 1  $\phi$ , 5 Wire Synchro information on R1 and R2 and 0 VAC to 90 VAC on any two of the S1, S2, and S3 leads.

<u>J49</u>	
<u>Cable Pin</u>	<u>Signal</u>
17	Dist/Speed R1 (R HI)
18	Dist/Speed R2 (R LO)
19	Dist/Speed S1 → Varying Amplitude
20	Dist/Speed S2 → Varying Amplitude
21	Dist/Speed S3 → Varying Amplitude

15 CV-3989(V)1/SP DSDC Using a Multimeter, ensure radar true bearing input signals are present at disconnected cable. Input should be as follows:

<u>J49</u>	
<u>Cable Pin</u>	<u>Signal</u>
34	True Bearing 6.3 VAC, 60 Hz (Radar 1 is providing true azimuth 1 information) or 0.5 VAC, 60 Hz (Radar 1 is providing relative azimuth 1 information)
35	True Bearing RTN
36	True Bearing 6.3 VAC, 60 Hz (Radar 2 is providing true azimuth 2 information)



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**INITIAL CONDITIONS AND SETUP**

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<b><u>STEP</u></b>	<b><u>STATION</u></b>	<b><u>INSTRUCTIONS</u></b>
		<u>J49</u> <u>Cable Pin</u> <u>Signal</u> or 0.5 VAC, 60 Hz (Radar 2 is providing relative azimuth 2 information)
		37                  True Bearing RTN
16	CV-3989(V)1/SP DSDC	Turn Maintenance Disconnect switch to OFF position.
17	CV-3989(V)1/SP DSDC	Reconnect input cable disconnected from SYNCHRO T/R (J49).

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**TESTING STEPS**

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<u>STEP</u>	<u>STATION</u>	<u>INSTRUCTIONS</u>																		
<u>LIGHT OFF</u>																				
1	CV-3989(V)1/SP DSDC	Turn Maintenance Disconnect switch to ON position.																		
2	CV-3989(V)1/SP DSDC	Set AC POWER switch to ON position.																		
3	CV-3989(V)1/SP DSDC	Verify Power ON indicator is lit.																		
4	CV-3989(V)1/SP DSDC	Set Upper and Lower chassis 1A2 Power Supply module switches to ON position.																		
5	CV-3989(V)1/SP DSDC	Verify 1A2 Power Supply modules +5V, +12V and -12V indicators are lit on both the Upper and Lower chassis.																		
<u>RADDS OUTPUT TEST</u>																				
6	CV-3989(V)1/SP DSDC	<p>Ensure the Light Emitting Diode (LED) indicator states for the Formatter module (1A3):</p> <table> <tr> <td><u>Module</u></td><td><u>Indicator</u></td><td><u>State</u></td></tr> <tr> <td>Formatter</td><td>PSL (Amber LED)</td><td>ON</td></tr> <tr> <td>(1A3)</td><td>RUN (Green LED)</td><td>ON</td></tr> </table> <p><u>RECORD</u> on Test Data Recording sheet.</p>	<u>Module</u>	<u>Indicator</u>	<u>State</u>	Formatter	PSL (Amber LED)	ON	(1A3)	RUN (Green LED)	ON									
<u>Module</u>	<u>Indicator</u>	<u>State</u>																		
Formatter	PSL (Amber LED)	ON																		
(1A3)	RUN (Green LED)	ON																		
7	CV-3989(V)1/SP DSDC	<p>The Synchro module (1A4) Status LED indicates presence of Synchro inputs. Ensure either of the following indicator states for the Synchro Module:</p> <p>a. (Any Synchro Input NOT present)</p> <table> <tr> <td><u>Module</u></td><td><u>Indicator</u></td><td><u>State</u></td></tr> <tr> <td>Synchro</td><td>Status (Red LED)</td><td>ON</td></tr> <tr> <td>(1A4)</td><td>BUS Error (Red LED)</td><td>OFF</td></tr> </table> <p>b. (All Synchro Inputs present)</p> <table> <tr> <td><u>Module</u></td><td><u>Indicator</u></td><td><u>State</u></td></tr> <tr> <td>Synchro</td><td>Status (Red LED)</td><td>OFF</td></tr> <tr> <td>(1A4)</td><td>BUS Error (Red LED)</td><td>OFF</td></tr> </table> <p><u>RECORD</u> on Test Data Recording sheet.</p>	<u>Module</u>	<u>Indicator</u>	<u>State</u>	Synchro	Status (Red LED)	ON	(1A4)	BUS Error (Red LED)	OFF	<u>Module</u>	<u>Indicator</u>	<u>State</u>	Synchro	Status (Red LED)	OFF	(1A4)	BUS Error (Red LED)	OFF
<u>Module</u>	<u>Indicator</u>	<u>State</u>																		
Synchro	Status (Red LED)	ON																		
(1A4)	BUS Error (Red LED)	OFF																		
<u>Module</u>	<u>Indicator</u>	<u>State</u>																		
Synchro	Status (Red LED)	OFF																		
(1A4)	BUS Error (Red LED)	OFF																		

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**TESTING STEPS**

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<u>STEP</u>	<u>STATION</u>	<u>INSTRUCTIONS</u>																																																						
8	CV-3989(V)1/SP DSDC	<p>The Serializer modules (1A5) CH1 and CH2 Status LEDs indicate presence of RADAR Triggers and RADDs Data Stream outputs. Ensure the following indicator states for both Serializer modules:</p> <table> <tr> <th><u>Module</u></th><th><u>Indicator</u></th><th><u>State</u></th></tr> <tr> <td rowspan="4">Serializer (1A5) CH1 and CH2</td><td>a. (TM1 NOT Present)</td><td></td></tr> <tr> <td>AIR (Green LED)</td><td>OFF</td></tr> <tr> <td>SUR (Green LED)</td><td>OFF</td></tr> <tr> <td>TM1 (Green LED)</td><td>OFF</td></tr> <tr> <td></td><td>TM2 (Green LED)</td><td>OFF</td></tr> <tr> <td></td><td>b. (TM1 Present)</td><td></td></tr> <tr> <td></td><td>AIR (Green LED)</td><td>ON</td></tr> <tr> <td></td><td>SUR (Green LED)</td><td>ON</td></tr> <tr> <td></td><td>TM1 (Green LED)</td><td>ON</td></tr> <tr> <td></td><td>TM2 (Green LED)</td><td>ON</td></tr> <tr> <td></td><td>c. (TE NOT Present)</td><td></td></tr> <tr> <td></td><td>TE (Green LED)</td><td>OFF</td></tr> <tr> <td></td><td>d. (TE Present)</td><td></td></tr> <tr> <td></td><td>TE (Green LED)</td><td>ON</td></tr> <tr> <td></td><td>e. (TIFF NOT Present)</td><td></td></tr> <tr> <td></td><td>TIFF (Green LED)</td><td>OFF</td></tr> <tr> <td></td><td>f. (TIFF Present)</td><td></td></tr> <tr> <td></td><td>TIFF (Green LED)</td><td>ON</td></tr> </table> <p><u>RECORD</u> on Test Data Recording sheet.</p>	<u>Module</u>	<u>Indicator</u>	<u>State</u>	Serializer (1A5) CH1 and CH2	a. (TM1 NOT Present)		AIR (Green LED)	OFF	SUR (Green LED)	OFF	TM1 (Green LED)	OFF		TM2 (Green LED)	OFF		b. (TM1 Present)			AIR (Green LED)	ON		SUR (Green LED)	ON		TM1 (Green LED)	ON		TM2 (Green LED)	ON		c. (TE NOT Present)			TE (Green LED)	OFF		d. (TE Present)			TE (Green LED)	ON		e. (TIFF NOT Present)			TIFF (Green LED)	OFF		f. (TIFF Present)			TIFF (Green LED)	ON
<u>Module</u>	<u>Indicator</u>	<u>State</u>																																																						
Serializer (1A5) CH1 and CH2	a. (TM1 NOT Present)																																																							
	AIR (Green LED)	OFF																																																						
	SUR (Green LED)	OFF																																																						
	TM1 (Green LED)	OFF																																																						
	TM2 (Green LED)	OFF																																																						
	b. (TM1 Present)																																																							
	AIR (Green LED)	ON																																																						
	SUR (Green LED)	ON																																																						
	TM1 (Green LED)	ON																																																						
	TM2 (Green LED)	ON																																																						
	c. (TE NOT Present)																																																							
	TE (Green LED)	OFF																																																						
	d. (TE Present)																																																							
	TE (Green LED)	ON																																																						
	e. (TIFF NOT Present)																																																							
	TIFF (Green LED)	OFF																																																						
	f. (TIFF Present)																																																							
	TIFF (Green LED)	ON																																																						
9	CV-3989(V)1/SP DSDC	<p>The Quad Azimuth II module (1A15) CH1 and CH2 status LEDs indicate presence of Stabilized Azimuth inputs.</p> <p><u>Valid Stabilized Azimuth Inputs</u>  SIN/COS  ACP/ARP  SDT  3 Wire  6 Wire</p>																																																						

## TESTING STEPS

### STEP    STATION

### INSTRUCTIONS

Ensure the following indicator states for the Quad Azimuth II module if installed.

a. (Stabilized Azimuth NOT present)

<u>Module</u>	<u>Indicator</u>	<u>State</u>
Quad	CH1 (Green LED)	OFF
Azimuth II (1A15)	CH2 (Green LED)	OFF

b. (Stabilized Azimuth present)

<u>Module</u>	<u>Indicator</u>	<u>State</u>
Quad	CH1 (Green LED)	ON
Azimuth II (1A15)	CH2 (Green LED)	ON

RECORD on Test Data Recording sheet.

10    CV-3989(V)1/SP DSDC

Connect oscilloscope and T-Connector to output AIR A (J3) of CV-3989(V)1/SP DSDC.

#### NOTE

Connect a 75-ohm resistive load across CV-3989(V)1/SP DSDC output T-Connector before connecting oscilloscope for measurements. The 75-ohm load simulates actual equipment loading.

### RADDS OUTPUT

11    CV-3989(V)1/SP DSDC

Monitor output signal at AIR A jack (J3).  
RECORD on Test Data Recording sheet.  
Expected output signal is shown in Figure 1.

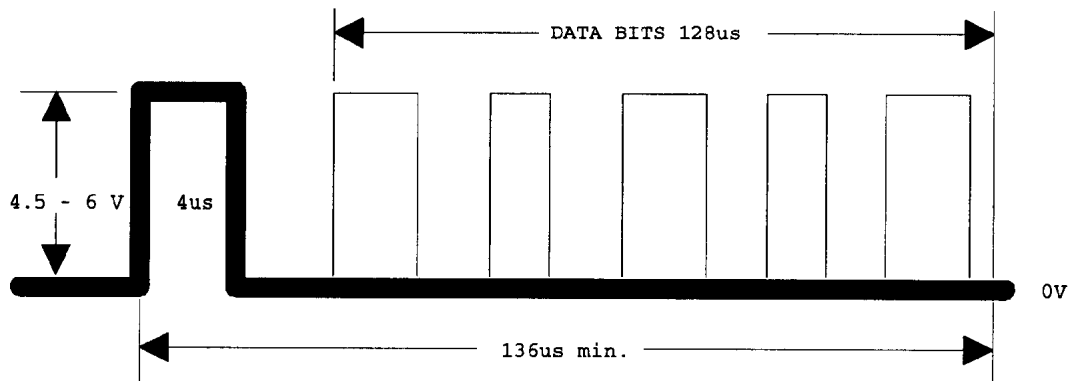


Figure 1. RADDS Data Stream.

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**TESTING STEPS**

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<u>STEP</u>	<u>STATION</u>	<u>INSTRUCTIONS</u>
		<p><u>NOTE:</u> Data burst shown in Figure 1 is repeated at the PRF of the radar. The 128us "data bit" region shown in Figure 1 contains 64 data bits. Step 11 tests only for the presence of the 64 data bits, NOT for the condition of each bit (High or Low).</p>
12		<p>Repeat steps 10 and 11 for the following output jacks:</p> <ul style="list-style-type: none"><li>a. SUR A (J4)</li><li>b. AIR B (J11)</li><li>c. SUR B (J12)</li><li>d. AIR A (J19)</li><li>e. SUR A (J20)</li><li>f. AIR B (J27)</li><li>g. SUR B (J28)</li></ul> <p><u>RECORD</u> on Test Data Recording sheet.</p>
13	CV-3989(V)1/SP DSDC	<p>Disconnect oscilloscope from output SUR B (J28).</p>

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**SHUTDOWN AND SECURING**

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<b><u>STEP</u></b>	<b><u>STATION</u></b>	<b><u>INSTRUCTIONS</u></b>
1	CV-3989(V)1/SP DSDC	Set Upper and Lower chassis 1A2 Power Supply module switches to OFF independently.
2	CV-3989(V)1/SP DSDC	Set AC POWER switch to OFF position.
3	CV-3989(V)1/SP DSDC	Turn Maintenance Disconnect switch to the OFF position.

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**TEST DATA RECORDING**

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**EQUIPMENT UNDER TEST**

**EQUIPMENT**

CV-3989(V)1/SP DSDC

**SERIAL NO.**

\_\_\_\_\_

**PREREQUISITES**

45011-3-060, CV-3989(V)1/SP Analog to Digital Converter ILO

Prerequisites Completed \_\_\_\_\_ Signature and Date \_\_\_\_\_

**TEST DATA RECORDING**

<b><u>STEP</u></b>	<b><u>TEST ELEMENT</u></b>	<b><u>EXPECTED RESULTS</u></b>	<b><u>ACTUAL RESULTS</u></b>
6	<u>FORMATTER MODULE (1A3) FRONT PANEL LEDs</u> PSL RUN	ON (Amber) ON (Green)	 _____ _____
7	<u>SYNCHRO MODULE (1A4) FRONT PANEL LEDs</u> a. <u>Any Synchro Input NOT Present</u> Status BUS Error	ON (Red) OFF	 _____ _____
	b. <u>All Synchro Inputs Present</u> Status BUS Error	OFF OFF	 _____ _____
8	<u>SERIALIZER MODULE (1A5) CH1 FRONT PANEL LEDs</u> a. <u>TM1 NOT Present</u> AIR SUR TM1 TM2	OFF OFF OFF OFF	 _____ _____ _____ _____
	b. <u>TM1 Present</u> AIR SUR TM1 TM2	ON (Green) ON (Green) ON (Green) ON (Green)	 _____ _____ _____ _____

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SHIP HULL NO.

TEST CONDUCTOR  
SIGNATURE

GOVERNMENT WITNESS  
SIGNATURE

DATE

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TEST DATA RECORDING

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<u>STEP</u>	<u>TEST ELEMENT</u>	<u>EXPECTED RESULTS</u>	<u>ACTUAL RESULTS</u>
c.	<u>TE NOT Present</u> TE	OFF	_____
d.	<u>TE Present</u> TE	ON (Green)	_____
e.	<u>TIFF NOT Present</u> TIFF	OFF	_____
f.	<u>TIFF Present</u> TIFF	ON (Green)	_____
<u>SERIALIZER MODULE (1A5) CH2 FRONT PANEL LEDs</u>			
a.	<u>TM1 NOT Present</u> AIR	OFF	_____
	SUR	OFF	_____
	TM1	OFF	_____
	TM2	OFF	_____
b.	<u>TM1 Present</u> AIR	ON (Green)	_____
	SUR	ON (Green)	_____
	TM1	ON (Green)	_____
	TM2	ON (Green)	_____
c.	<u>TE NOT Present</u> TE	OFF	_____
d.	<u>TE Present</u> TE	ON (Green)	_____
e.	<u>TIFF NOT Present</u> TIFF	OFF	_____
f.	<u>TIFF Present</u> TIFF	ON (Green)	_____

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SHIP HULL NO.

TEST CONDUCTOR  
SIGNATURE

GOVERNMENT WITNESS  
SIGNATURE

DATE

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**TEST DATA RECORDING**

<b><u>STEP</u></b>	<b><u>TEST ELEMENT</u></b>	<b><u>EXPECTED RESULTS</u></b>	<b><u>ACTUAL RESULTS</u></b>
9	<u>QUAD AZIMUTH II MODULE (1A15) FRONT PANEL LEDs</u>		
	a. <u>Stabilized Azimuth NOT Present</u>		
	CH1	OFF	_____
	CH2	OFF	_____
	b. <u>Stabilized Azimuth Present</u>		
	CH1	ON (Green)	_____
	CH2	ON (Green)	_____
11	<u>OUTPUT SIGNAL</u>		
	AIR A (J3)	As shown in Figure 1	_____
12	<u>OUTPUT SIGNAL</u>		
	a. SUR A (J4)	As shown in Figure 1	_____
	b. AIR B (J11)	As shown in Figure 1	_____
	c. SUR B (J12)	As shown in Figure 1	_____
	d. AIR A (J19)	As shown in Figure 1	_____
	e. SUR A (J20)	As shown in Figure 1	_____
	f. AIR B (J27)	As shown in Figure 1	_____
	g. SUR B (J28)	As shown in Figure 1	_____

SHIP HULL NO.	TEST CONDUCTOR SIGNATURE	GOVERNMENT WITNESS SIGNATURE	DATE
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**TEST TITLE:** CV-3989(V)1/SP ANALOG TO DIGITAL  
CONVERTER OPERABILITY

**TEST NO:** 45011-5-055  
**REV/CHG:** A

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**TEST EQUIPMENT USED**

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List all test equipment utilized in the test including all general and specialized test equipment, special test cables, attenuators, and any other materials requiring calibration. Include extra sheets as necessary to identify all test equipment.

<u>GENERIC NAME</u>	<u>MODEL</u>	<u>SERIAL NO.</u>	<u>CALIBRATION DUE DATE</u>	<u>REMARKS</u>
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SHIP HULL NO.

TEST CONDUCTOR  
SIGNATURE

GOVERNMENT WITNESS  
SIGNATURE

DATE

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**COMMENTS**

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This sheet is provided for the test conductor or Government witness to make appropriate comments including the following:

- a. Visual observations of dynamic responses;
- b. Erratic or unusual equipment behavior;
- c. Operational or handling difficulties;
- d. Procedural corrections;
- e. Equipment malfunctions;
- f. Discrepancies noted during test conduct; and,
- g. Waivers including reference to authorization document, i.e., letter, message, etc.

Indicate if a Test Problem Report (TPR) was generated with respect to these or other problems.

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SHIP HULL NO.

TEST CONDUCTOR  
SIGNATURE

GOVERNMENT WITNESS  
SIGNATURE

DATE

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